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COMDEX/Fall '87 – Impressions

Paul Roth PROTH at UTORONTO
Terry Sanderson SANDERS at UTORONTO

[This article summarizes two longer reports, which are available on the UTCS Bulletin Board System and also in printed form at the UTCS Information Centre.]

Early in November, COMDEX, the computer-dealer exposition, descended on Las Vegas. There were over 100,000 people crammed into seven sites, including the enormous Convention Centre and an assortment of hotels. Exhibitors came from 18 countries, including Canada, Holland, France, Sweden, and Hong Kong (not quite a country), and at least ten percent of the show's attendees were expected from outside North America.

The convention combines a computer show and a conference. In several conference sessions, important figures in the microcomputer industry speculated on coming trends. This article will deal first with some of the conference sessions and then quickly review the major product announcements at the show.

Session 1. IBM's PS/2: What's Selling, Who's Buying?

The panel at this session analyzed how well the new IBM Personal System/2 microcomputers have been selling since their introduction last April and offered some opinions about their future.

Perceptions of who is buying varied. One person thought that major corporations, with lots of money to spend and perhaps a need to connect to networks or IBM mainframes, buy PS/2s; individuals or small businesses (the "low end of the market") are most influenced by the price/performance ratio. Someone else considered the "middle" market the most price conscious and thought that small businesses can't afford to take chances with a lower-priced compatible or clone. Still others felt that all or most of the PS/2 models will fail, the likely survivor being the Model 80. (The facts dispute such conclusions, however, since one million PS/2s were sold in the first six months after the April announcement. It was 28 months before the original PC reached that figure. Most companies would feel that a product line bringing in three to four billion dollars in its first six months is definitely not a failure.)

Norman De Witt, a market researcher whose past predictions have been uncannily accurate, thought that people value the PS/2's new graphics capabilities and new system design features. He added, however, that potential buyers are confused about the actual benefits of the latter because there is not yet any software that uses OS/2 or the Micro Channel Architecture (MCA). He believes that the PS/2 family will be well accepted by business users, but that in general those users will buy a mix of compatibles and PS/2s – the compatibles market is still strong. He also added that the 3.5 inch diskette does not appear to have a major negative impact on the purchasing decision.

There was disagreement on how soon IBM would license the MCA, thereby allowing the manufacture of clones.

What can you run on MCA that you can't run on a 286 AT? Answers: smart peripherals; SQL database functions on a card, plugged into the MCA; RT or System/36 coprocessors on the MCA. By the way, third-party developers are already working on add-in boards for the MCA.

Session 2. Software Horizons '88

The goal of this session was to predict software trends for next year.

In one way or another, much of the discussion dealt with user interface issues, especially the effect of a standard interface on software. The standard Macintosh interface is reasonably mature and probably won't change much. To a suggestion that such a standard should be applied to OS/2, Bill Gates, Chairman of the Board at Microsoft Corporation, replied that in the case of the Macintosh, users apply their purchasing power to determine what a good interface should be, i.e., they just won't buy a product with a poor interface.

The advantages of OS/2 over existing Microsoft **Windows/386** were discussed. Even though Windows is already there and allows multitasking, a planned upgrade of OS/2 (in 1989) will accommodate the 386 fully, including multitasking and applications of greater than 16MB RAM. OS/2 memory management allows multitasking in such a way that one process can treat another like a subroutine. Microsoft plans to charge a US$50 upgrade fee for an OS/2 version of an existing product.

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COMDEX/Fall '87 continued.

Gates made some other observations (when he talks, people listen):

- Opportunity arises when the hardware or software foundations change: right now, the PS/2's graphics, with faster speed, represent a hardware change, and OS/2 represents the software change. Hence the next two years will be very interesting, more so than the past two.

- IBM and Microsoft now have a style guideline for software development, similar to the Macintosh's.

- Word processing will have new forms, since all fonts will be shown in graphical format.

Some other topics discussed were: "work group productivity" (e.g., with micros in a LAN) as a new software area opportunity; the OS/2 WordPerfect, in which you can specify how much RAM to allocate to WordPerfect and in which concurrent printing is allowed (even when you exit to the shell, for instance); and the potentially revolutionary impact of CD-ROMs.

Session 3. CD-ROM Products

This panel session concentrated solely on CD-ROMs for the PC world; no Macintosh features were discussed at all. Apparently the Macintosh CD-ROM invasion is still a few months away.

Highlights of this session included advice to buy subscriptions to CD-ROM titles to take advantage of periodic updates, and to subscribe to only the titles you need. LAN pricing is available as well. Production and usage costs for CD-ROMs have decreased in the last two years, so that publishers are now hoping to broaden the market. Panelists advised new developers to "jump in now": there is plenty of opportunity for CDs.

The Microsoft representative said that "no other product rivals CD for speed." He categorized CD applications as publishing data; enhancing existing applications (templates, tutorials); adding knowledge; and presenting information in a multimedia fashion. Microsoft **Bookshelf** was mentioned as providing easy access to a wealth of reference information, using memory-resident software. (Bookshelf is now available for review at the UTCS Micro Lab.)

All agreed that standards would make life easier for the seller: it would be unnecessary to distribute multiple CDs, and the customer would not have to reboot for each CD-ROM. Customers would be able to use existing players for many different CDs. The High Sierra format, with MS-DOS extensions, represents the closest thing to a standard today.

Announcements and New Products

As to the show itself, it may be that the day of shows with revolutionary new product announcements has passed. The industry has matured, and with maturity comes a settling down. Don't misunderstand: there were many interesting announcements and innovative products, but no new Lotus or dBASE, nothing to stand the industry on its ear.

Software

The biggest announcement was made by IBM. **OS/2 1.0** will be released on December 4, 1987, with the next implementations to follow. In summary:

OS/2 1.0	December 4, 1987
OS/2 1.0 Extended	July 1988
OS/2 1.1	October 1988
OS/2 1.1 Extended	November 1988

The 1.0 releases above exclude the Presentation Manager (the Windows-like user interface). Since Version 1.1 was expected before the Extended edition, these announcements are a bit of a setback for the many people who want the Presentation Manager.

A prerelease version of OS/2 1.1 was on display at the show, although the "applications" running were primitive (e.g., continually scrolling through lists of the letters "IBM"). It did look reasonably fast with several processes running, and the overlapping windows and dialog boxes seemed well designed. Although you can run the Presentation Manager with Function keys, a mouse seems advisable.

A notable piece of software is Microsoft's **Windows/386**. It requires a machine with an 80386 processor, at least 1MB RAM, a hard disk, and some kind of advanced display adapter. Given all this, it then allows you to run a true multitasking environment with

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COMDEX/Fall '87 continued.

standard (i.e., non-OS/2) software applications. All the standard Windows functions are available, and the windows are layered, not tiled.

WordPerfect Corporation announced a version of **WordPerfect for the Macintosh**, to be ready for December 1987. This is said to be a complete rewrite of the PC version, making full use of the Mac interface, and a demonstration did indeed support this claim. The Mac version includes the Speller and Thesaurus, and most other features of the PC version. In addition, the Print Preview option shows up to two full pages displayed in miniature, with a zoom-in capability as well. Import and export conversions are available for PC WordPerfect 4.1 and 4.2 documents, making it attractive for dual environments. A Mac 512K, Plus, SE, or II is required.

The Mac version for printing is much more amenable for PostScript printing on the LaserWriter. This feature has also been announced in the PC world for **WordPerfect 5.0**, due next March. Since PostScript printing in Version 4.2 was never a delight (proportional spacing was badly implemented, for example), this change is significant for WordPerfect users in a PC-Mac environment where an Apple LaserWriter is shared.

WordPerfect 5.0 is said to offer other significant features; two of the most important are:

- Integrated Text and Graphics, where an image imported from Lotus, PC Paintbrush, and other packages can be scaled, moved, rotated, cropped, etc. within a document. A screen-capture utility will take a graphics image from any graphics program.

- Improved Preview, letting you display an entire page of text and graphics at once, zoom in, or view facing pages together.

Aldus announced two new products. **Freehand**, for the Macintosh, is a drawing program supporting up to 256 colours on the Mac II, freehand sketching, PostScript line and curve tools, and a wide range of text-handling and advanced design features. **Snapshot**, for the PC, lets you capture and manipulate images from video cameras, VCRs, video monitors, or laser disks.

In the database arena, three products were of special interest. **dBASE Mac** from Ashton-Tate and **McMax** from Nantucket are both dBASE implementations on the Macintosh, but they are oriented towards different markets. dBASE Mac is for Macintosh users who need a database manager and who may have heard of dBASE's popularity on the PC. McMax, on the other hand, provides a friendly conversion path for PC users who have recently moved to the Mac. One significant difference between the two is dBASE Mac's ability to manipulate graphic images: McMax is text only.

The third database product is the Summer '87 version of Nantucket's **Clipper**, the dBASE compiler for the PC. Among other new features, it now allows the option of using its own index files or the dBASE index files, a significant improvement, to be sure.

Lotus introduced **Agenda**, its new personal information manager for the PC. Basically, it allows you to input data in the form you find most comfortable and then retrieve (or display) the data in a similar form. For example, expressions such as "tomorrow" and "next Monday" are automatically converted into calendar dates.

Borland announced a new spreadsheet package, available for PC-DOS now and OS/2 soon, called **Quattro**. This may be an attempt to get the first Lotus 1-2-3 (i.e., hot seller) for OS/2; 1-2-3 for OS/2 isn't expected for a few months. Quattro is supposedly faster than 1-2-3 and offers many improvements at half the list price.

Fifth Generation Systems announced **FASTBACK for the Macintosh** and an improved PC version called **FASTBACK PLUS**. The Mac version supposedly backs up 10MB in ten minutes, the PC version 10MB in four minutes. The PC version requires 448KB RAM and is now claimed to be compatible with certain PC clones (the Zenith 241, for instance). The Mac version works on a Mac 512K and up, and supports AppleShare and MacServe remote volumes.

A product with interesting possibilities is **EXACT** from Technical Support Software, Inc. It lets you use your own word processor to input mathematical equations, displaying them on the screen as you create and edit them. A number of features are available, such as

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COMDEX/Fall '87 continued.

Greek letters, unlimited super- and subscripts, and manipulation of symbols and characters. It supports most printers (but not PostScript), CGA, EGA, and Hercules.

InfoWorld, the popular micro weekly newspaper, distributed the *InfoWorld Hardware Benchmark* diskette, designed to help evaluate performance on your IBM PC, XT, or AT. (Copies of this diskette can be obtained at the UTCS Information Centre or on the UTCS Bulletin Board System.)

Hardware

Nearly every machine manufacturer showed a 386-based machine. Outstanding were the AST Research and Grid Systems. AST's entry is the **Premium/386**, which uses AST's Smartslot Architecture to allow multiple bus masters (such as IBM's Micro Channel Architecture), but at the same time retains full compatibility with the AT bus. Grid displayed the **GridCase 1530**, a 12-pound laptop that runs on batteries. Other new laptops were on view as well, from Sharp, NEC, Toshiba, and Epson.

Many add-in boards were being shown, several of them 80386 replacement motherboards meant to bring 386 speed to owners of PCs and XTs. For the Macintosh, an interesting piece of hardware was AST's **Mac286** board, an add-in for the Mac II. Once the hardware and software are installed, you need only click on the Mac286 icon and the DOS prompt appears. Unlike some other products of this kind, this one seems to work.

One interesting product is the **PC Viewer** from In Focus Systems. This is an overhead projection panel that connects to your micro and projects the micro's screen image through a standard overhead projector onto a large wall screen. This is ideal for classrooms and presentations. UTCS currently uses a Sharp QA-25 for this purpose in our IBM Education Facility, and we have been looking for one that could be used from a Mac. Though the PC Viewer will not be available until January, it is clearly the best we have seen for Macintosh projection panels. That it also works with IBM PCs is a bonus. PC Viewer lists for US$1695.

A company called Liquid Light offers **Imprint**, a method of attaching an Amiga to the **Polaroid Palette** to produce high-resolution (up to 704 x 512) colour slides. Since we have both a Palette and an Amiga in the UTCS Micro Lab, we would consider purchasing Imprint if there were enough interest in using such a slide-production service here. If you are interested, please call Paul Roth at 978-5426.

Packard Bell introduced a number of new products, the most unusual being a hand-held "pocket scanner," which scans at 200 dots per inch. The scanner offers an inexpensive way of doing "clip art" into PageMaker, Ventura, and other graphics-based programs. It should be available in January.

Atari also introduced a number of new products. Most impressive was the **ABAQ** high-performance workstation based on a *transputer* chip, running ten times faster than an AT, and capable of parallel processing. The colour graphics on the ABAQ are nothing short of stunning.

Summary

For a micro enthusiast, COMDEX is the place to be in November. The show is perhaps too big, but it is very well organized. To cover it all, you need the full five days. While the conference sessions were a bit disappointing this year, it is still useful to hear what the "biggies" have to say.

Subscription Renewals

Martha Parrott
PARROTT at UTORONTO

It is now time for *ComputerNews* readers to renew their subscriptions. Because all subscriptions run from January to January, even new users, who become subscribers automatically when they open a UTCS account, must renew at this time if they wish to continue receiving *ComputerNews*.

To renew, just fill out the ***Annual ComputerNews Subscription Renewal Form*** appearing opposite this article. Any subscription not renewed by the beginning of January will be dropped.

Please remember that this policy helps us keep our mailing costs down and continue to provide the newsletter free of charge.

University Returns to EDUCOM

The University of Toronto has resumed its membership in EDUCOM after an absence of about four years. EDUCOM is a nonprofit consortium of over 500 colleges and universities, mostly in North America, interested in technology transfer, cooperative efforts, and sharing information technology resources. In support of these interests, it holds conferences and seminars, publishes the *EDUCOM Bulletin* and some newsletters, and sponsors a number of task forces that focus on areas of particular interest. For example, the Networking and Telecommunications Task Force works with university associations and government to develop coherent networking policies. Representatives from 25 major research institutions participate in this Task Force. Another example is the EDUCOM Software Initiative, which is aimed at stimulating the development and distribution of software in institutions of higher education. Through this effort, the EDUCOM Academic Software Awards were established, and the first set of Awards were announced at a recent conference. Another effort of the Software Initiative encourages studies of the effects of instructional software on the learning experience. A third group is devoted to cataloguing information on software and software evaluations.

As a member of EDUCOM, the University is eligible for discounts and other services from approximately 60 technology companies that belong to its Corporate Associates Program.

Dr. E.V. Swenson is the University's Institutional Representative to EDUCOM. Requests for further information on EDUCOM and its activities should be directed to her at 978-5138 or ESWENSON@UTORONTO. She is particularly interested in hearing from developers of instructional software who might be persuaded to enter the next annual Academic Software competition.

Desktop Publishing: UTCS Support

John Bradley
BRADLEY at UTORONTO

In 1985, Apple and Aldus began the desktop publishing revolution with the announcement of the arrival of the LaserWriter and PageMaker. Today, desktop publishing is a very innovative field, with many different packages competing for a growing market.

The University of Toronto is a natural environment for desktop publishing: publishing is an important facet of life for many faculty and staff at U of T, and many departments publish their own newsletters, reports, and journals. UTCS has been involved in the area for over a year, offering both high quality laser printing and typesetting to the personal computer market. We have also worked with PageMaker and other desktop publishing packages in the Micro Lab. However, many people will need help to get started with the new desktop publishing systems, and UTCS has thus decided to upgrade its support. Here is an outline of our present activities:

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Desktop Publishing continued.

- We now offer a four-hour introductory seminar on desktop publishing topics and issues. In so short a time, we cannot make you a proficient user in any desktop publishing system, but we can introduce you to the most important issues and the current directions the industry is taking. In addition, you will get some sense of how desktop publishing may be useful in your environment.

- We are preparing a short course called Introduction to PageMaker. Though taught on the Apple Macintosh computer, the course will also be suitable for those using PageMaker on the IBM PC. We expect to offer the course for the first time in January 1988.

- We are upgrading to Class B our support for the two most popular desktop publishing packages: PageMaker on the Macintosh, and Ventura on the IBM PC. This means we will try to provide a resource person at UTCS who can help you with problems and questions.

If you are interested in the introductory seminar, or in the introductory PageMaker course, please check the course listings (elsewhere in this issue) or call Irene Rosiecki at 978-4565. If you want help getting started with desktop publishing, please call me at 978-3995. I would be glad to talk to you.

Printing on the ImageWriter versus the LaserWriter

Alicia Damley
damley@gpu.utcs
DAMLEY at UTORONTO

Have you ever wondered why there seems to be a discrepancy between the output of a document on the ImageWriter (in "normal" mode) and the output on the LaserWriter on letter-size paper? The answer lies in the "print area" on the page for each printer.

The LaserWriter has a smaller print area (8.0 x 10.92in) than the ImageWriter (8.5 x 11in). Thus, when you change between the two printers, the application automatically adjusts the final width of a line based on the print area and the margins you select. This means many changes will be reflected in a document that was proofed on an ImageWriter and then printed on a LaserWriter. Note: if you require the exact layout of the text on each page, you can select the "TALL ADJUSTED" option when you specify the ImageWriter. This option corrects the proportion of height to width (often called the "aspect ratio") when printing on the ImageWriter.

This change in the amount of text per page also appears in the screen version of the document. However, various applications handle the change of text per line in different ways. For example, Microsoft Word 3.0 adjusts the scale of the ruler, keeping the length of the line and margins the same. MacWrite changes the margins, keeping the characters per line the same; this can result in words being cut off at the edges.

Keep this information in mind, and all of your document processing, from draft to finished product, will be easier and more efficient.

Sanyo PLUS 16: An Evaluation

Paul Roth
PROTH at UTORONTO

The first thing you notice about a Sanyo PLUS 16 is its small footprint; then you wonder what was sacrificed to accommodate such a small system unit. In this case, the small size produces three limitations:

1. Only three expansion slots are available, each half size. One slot is needed for the disk-controller card, which is capable of handling up to three devices. Another slot is taken by the Hercules-style display adapter. Thus only one free slot remains.

2. Although the controller appears to support three drives, there is room inside for only two half-height drives: in this case, a floppy drive and a 20MB hard disk.

3. There are two banks of 256KB RAM chips on the motherboard, but each bank has only eight, not the more usual nine. As a result, parity checking is not provided.

These limitations aside, the machine appears to be a contender. The system unit has a side-mounted power supply. Removing the cover is easy and painless (assuming you have left yourself easy access to the screws on the sides of the unit), and the cover is easily replaced on the first try. The monitor plugs into an unswitched outlet on the back of the system unit, saving you one outlet. The power switch is right on the front of the unit, a nice touch.

Sanyo has tried to avoid confusion wherever possible: the 25-pin parallel and serial (RS-232C) ports are clearly labelled, as is the processor-speed switch on the back of the unit. There are even large "A" and "B" labels on the system unit where the floppy drives reside, although with a hard disk installed, the "B" doesn't help much. One oddity: there is no hard-drive light, a feature many people rely on to tell them that their machine has gone into an endless loop.

For performance measures, we used several benchmarking programs. The machine, which was put into its higher speed (8MHz) for all of our tests, uses 120-nanosecond RAM chips. Our results were as follows:

Norton's performance index is 1.5. In these measures, performance is rated against the IBM PC-XT (the XT is rated as 1.0), with the higher number the better. Another package gave us a 1.6 index. For hard-disk performance, we found 81 milliseconds the average access time, which is about the same as an XT. The hard disk's interleave was 3, with a maximum theoretical data transfer rate of 174 KB/sec; we expect about 140 KB/sec in practice.

Sanyo's MS-DOS 3.2 was used on the machine. It does have one interesting feature, which we did not test: it allows hard-disk partitions of up to 64MB, instead of DOS's more usual 32MB limit. Presumably this is done by doubling the number of sectors each disk cluster contains.

While the machine was in our Micro Lab, we installed in it a Centram Systems TOPS board, which allowed us to connect the Sanyo with two

Manufacturer: Sanyo Canada, Inc.

Type: 16-bit MS-DOS.

System Unit: 8088-2 CPU, with 8087-2 numeric coprocessor installed; 640KB RAM standard; 1 serial port; 1 parallel port; 3 half-length expansion slots, two of which are used by disk controller and display adapter cards; 8 MHz clock speed with 0 wait states and switch to change to 4.77 MHz; socket for monitor plug; Power switch on front; drive A clearly labelled.

Keyboard: 83-key IBM PC layout, with indicator lights for "CapsLock" and "NumLock"; fairly small "Enter" key; separate "Enter" key on numeric keypad; adjustable tilt; rubbery keys.

Monitor: TTL monochrome (amber on brownish background); monitor plugs into accessory outlet on rear of system unit; contrast, brightness, and power on front of monitor within easy reach of operator.

Disk Drives: One 360KB floppy disk drive, plus one 20 Megabyte (MB) internal hard disk.

Physical Description: 5.5"H, 13"W, 13"L; approximately 27 lbs, access to inside of machine: 2 screws on each side and 1 on back panel.

Warranty: One year, parts and labour.

Compatibility Level: 9x%.

Bundled Software: MS-DOS Version 3.2; GW-BASIC Version 3.2.

Documentation Provided: *MS-DOS User's Guide*; GW-BASIC manual; PLUS 16 user's guide.

continued...

Sanyo PLUS 16 continued.

Macintosh machines. This is considered a fairly stringent test of board compatibility, which not all machines pass easily. The Sanyo worked well from the start and continued to do so in a production environment for over two months without failure. In fact, none of the programs we used on it crashed at all. This includes mostly word-processing packages, such as WordPerfect and Multimate.

The screen resolution of the Sanyo CRT-41 monitor is fine. It is driven by a Hercules adapter clone, offering, for instance, true underlining in WordPerfect. The amber on brownish background is pleasing to the eye.

In summary, the Sanyo PLUS 16 we reviewed shows that Sanyo has come a long way. The machine is attractive, appears to be quite compatible, and is suitably fast for the market at which it is aimed: the first-time PC buyer wanting adequate resources but not concerned about major future additions. Although limited in growth potential (two drives only, one free slot), the Sanyo PLUS 16, if priced correctly, could provide serious competition for other XT clones.

Preparing for the SAS/PC Update

Andrzej J. Pindor
APINDOR at UTORONTO

The latest version of the SAS system for microcomputers, Version 6.03, is expected to be released in the near future; at the Canadian Computer Show, January 1988 was mentioned as a probable timeframe. The University of Toronto has ordered two new modules, SAS/GRAPH and SAS/FSP, which will be distributed to current license holders along with Base SAS and SAS/STAT. Version 6.03 will have many extensions and improvements over 6.02. As a result, it is larger and requires more diskettes for distribution. The four modules — Base, STAT, GRAPH, and FSP — will come on 45 diskettes (360KB DSDD 5.25 inch). The Map datasets, which come with SAS/GRAPH, require another ten diskettes.

Since we now have over 125 installations around campus, distributing the new version is no longer simple. In order to reduce both the cost to users and the turnaround time for requesting and installing 6.03, we have changed the procedure for distributing it.

- Registered users will be notified by mail as soon as we receive Version 6.03.
- We will make several copies of the installation diskettes on three different media: 360KB 5.25-inch diskettes, 1.2MB 5.25-inch diskettes, and 700KB 3.5-inch diskettes. These will be available on a two-day loan to those who have renewed or purchased SAS/PC since July of this year. A set of the Map diskettes will be available at the same time to those who want them.

continued...

Preparing for the SAS/PC Update continued.

- Users will call Dale Wright at 978-4990 to book a set of diskettes on the medium of their choice.
- Diskettes can be picked up any time during business hours (9 a.m. to 5 p.m.) during the loan period, but the diskettes must be returned by 5 p.m. on the second day of the load period.
- Users must leave a deposit in the form of an active CAN, a valid appropriation number, or cash. The deposit will be returned when the diskettes are returned on time. The amount of the deposit will be $125, which represents the cost of a set of diskettes and the staff time required to create it. (If the Map diskettes are borrowed as well, the deposit is $150.)

Those who wish to make a backup copy of the distribution diskettes may copy them onto their own diskettes during the loan period. Before incurring the added expense, consider that the distribution sets will be available for immediate loan once the majority of users have completed their update.

We hope this new method of distribution will provide faster, less expensive access to the SAS System on personal computers.

The Help Key

[The Help Key is an occasional feature prepared by Information Centre staff. If you have a question on some aspect of information technology, you are welcome to submit it to the Editor, at the address on the inside cover, or to SYSOP on the UTCS Bulletin Board System (be sure to mention that your question is for the Help Key).]

Electronic Mail is the subject of this month's Help Key.

Q Should I care which networks my colleagues are on when I ask for their electronic addresses?

A Assume your USERID is on the NetNorth network. There are two other networks closely associated with NetNorth: EARN, the European Academic Research Network, and BITNET, which currently includes the United States and Asia. Sometimes, NetNorth, EARN, and BITNET are collectively referred to as BITNET, but each is a separate network with a separate administration. (The British academic network JANET also falls into this group, though it is not referred to as BITNET.)

If you are sending mail to addresses in these networks, you do not need to include the network name in the address. All three networks use the same protocol (they all speak the same language), and each recognizes all the installations in the other two networks. Here are some examples of addresses for these networks.

mail george at uoguelph	**(NetNorth)**
mail george at cornell	**(BITNET)**
mail george at frecp11	**(EARN)**
mail george at vax.ox.ac.uk	**(JANET)**

If you are sending mail to a network other than the four mentioned, you will have to include the network name in the address. For example, if you are sending mail to the UUCP network, you need the UUCP identifier.

mail george at abc.uucp

Another such network is MAILNET.

mail george at xyz.mailnet

There are exceptions. If you are sending to an ARPAnet address, no network name is required; our software recognizes an ARPAnet format address.

mail george at xyz.texas.edu

continued...

The Help Key continued.

Q How do I find a colleague's electronic mail address?

A To initiate your electronic mail communications, first contact your colleague by conventional means (e.g., telephone, mail). You will need to exchange three pieces of information:

1. the USERID [e.g., GEORGE]
2. the node name [e.g., FRECP11]
3. the network name [e.g., EARN]

So, using the MAIL command, you would type:

```
mail george at frecp11
```

Getting in touch with your colleague and obtaining the necessary information will save you a lot of time in the future, since you will not have to deal with returned mail or with the trial-and-error method of contacting the "other end.

Information Centre Revisited

Reinhard Schuller
SCHULLER at UTORONTO

In an effort to keep you up-to-date with the information technology available from UTCS, the Information Centre offers talks on various topics to faculty members, graduate students, and staff at U of T. During the first term, many departments asked us to provide them with information. The second term is almost upon us, and this would be a perfect time to find out about our services and how to get the assistance you need. We have a wide range of services for users of microcomputers: hardware and software evaluation, laser printing, file transfers, and media conversions, as well as an expanding number of short courses. We can talk to you about electronic mail, word processing, and the facilities and products available to you. Talks can be customized to suit your particular needs; to arrange for one, please call me at 978-6878.

ProComm – Beware of the Default Drive

Steve Younker
YOUNKER at UTORONTO

Are you a new user of ProComm? If you are, and you have a dual drive machine, you should be aware of a small trap that can cause you much inconvenience.

Consider the following scenario. Your *write-protected* DOS disk is in drive A, and your new copy of ProComm is in the B drive. After booting your system, you issue the following command:

```
b:procomm
```

The A drive and the B drive grind away for a little while, and the following messages appear:

- Initializing
- Creating System Files
- Write protect error writing drive A
  Abort, Retry, Ignore?

Since this is the first time you have used ProComm on your machine, you might interpret these messages to mean that ProComm wants to initialize itself. It also appears from the messages that the ProComm disk is expected in the A drive. So, you remove your DOS disk from the A drive and substitute the *unprotected*

continued...

ProComm continued.

ProComm disk from the B drive. This is the logical response, but the wrong one: you have just written the directory from the DOS disk all over the files on the ProComm disk. How can this be?

When ProComm starts up, it searches the disk in the default drive for some files containing initial information about the attributes of your PC: information such as the selected baud rate and terminal-attribute setup.

In the case described above, the "procomm" command was issued with "b:". Thus the A drive was still the default, and ProComm looked for the files there. ProComm does two things when it initializes:

- It copies the directory from the default drive into memory (in this case, the A drive).
- It then copies the directory and some initialized ProComm files back onto the default drive.

Since you put the ProComm diskette into the A drive, the old directory (from the DOS diskette) was copied onto the ProComm diskette.

There would have been a happy ending if ProComm had been in the A drive when the "procomm" command was issued, or if you had made the B drive the default drive before you invoked ProComm.

Fortunately, once the initialized ProComm files are written onto the ProComm disk, this problem will not recur.

Of course, there is another moral to this real-life fable. ALWAYS have a backup of whatever disk you happen to be working on.

ProComm Communications Program Seminar

January 7, 1988
2:00 - 4:00 p.m.

February 10, 1988
10:00 - 12:00 noon

ProComm is a general purpose communications program currently available to all U of T faculty, staff, and students. It is the resident communications program in the Education Facility.

A seminar has been scheduled to introduce ProComm and its various features: terminal emulation (a number of popular ones will be reviewed); the dialing directory; file transfer protocols, such as Kermit and XMODEM; configuration and modem parameter settings; and the DOS gateway, which allows you to execute DOS commands and other programs while you are still in ProComm.

Copies of ProComm are made available at no charge, but you must bring your own diskettes (two 5.25" or one 3.5").

To register for this seminar, please phone me at 978-4565.

Irene Rosiecki
ROSIECKI at UTORONTO

Free NetNorth (Electronic Mail) Demonstration

January 7, 1988
4:00 - 5:30 p.m.

February 10, 1988
12:00 - 1:30 p.m.

Anyone interested in sending documents to colleagues or friends reliably, quickly, and inexpensively will not want to miss this demonstration. We will introduce you to the NetNorth/BITNET/EARN communications network, which is accessible from the CMS system. This network connects more than a thousand universities and research institutes in Europe, Asia, and North America. Sending documents or files over the network is very easy to learn.

The demonstration will last just over an hour. Included will be how to send mail and files to another institution, and how to talk directly to someone on the network. *Please note this is a demonstration only.*

Space is limited. If you would like to attend one of these sessions, please contact me at 978-4565 to reserve a place.

Irene Rosiecki
ROSIECKI at UTORONTO

Courses! Courses! Courses!

Irene Rosiecki
ROSIECKI at UTORONTO

UTCS staff are busy teaching microcomputer courses for both the IBM PC and compatibles, and the Macintosh computers. We are developing a PageMaker course on the Macintosh and have already scheduled one for the end of January. We have also scheduled an introductory WordPerfect course in the evening for people with busy daytime schedules. If the response to evening courses is positive, additional courses will be scheduled. Apart from the Desktop Publishing seminar, all courses at UTCS are hands-on, providing each student with a microcomputer during the course.

Class size is kept to a minimum, allowing for more student-teacher interaction. Registration is handled on a first-come, first-served basis. UTCS courses are usually offered on an ongoing basis every 4-6 weeks.

For a complete list of UTCS Microcomputer Courses, and to find out about course fees, please contact:

UTCS Education Office
4 Bancroft Avenue
Room 217
Phone: 978-4565

Listed below are course offerings for January, February, and March 1988:

CONIBM101 - Microcomputer Concepts (IBM)
Date: January 6, 1988
Time: 2:00 - 5:00 p.m.

Date: February 12, 1988
Time: 9:00 - 12:00 noon

dBASE101 - Introduction to dBASE III Plus
Date: January 25-29, 1988
Time: 11:00 - 1:00 p.m.

Date: March 7-11, 1988
Time: 3:00 - 5:00 p.m.

DOS101 - Introduction to DOS
Date: January 18-22, 1988
Time: 1:00 - 3:00 p.m.

Date: February 15-19, 1988
Time: 9:00 - 11:00 a.m.

continued...

Courses continued.

DSKTOP101 - Introduction to Desktop Publishing
NEW
Date: February 9, 1988
Time: 9:00 - 1:00 p.m.

LOTUS101 - Introduction to Lotus 1-2-3
Date: January 11-15, 1988
Time: 9:00 - 12:00 noon

Date: February 8-12, 1988
Time: 2:00 - 5:00 p.m.

MSWORD101 - Introduction to the Macintosh and Microsoft Word
Date: January 18-22, 1988
Time: 1:00 - 5:00 p.m. (January 18)
Time: 1:00 - 4:00 p.m. (January 19-22)

Date: Februay 15-19, 1988
Time: 1:00 - 5:00 p.m. (February 15)
Time: 1:00 - 4:00 p.m. (February 16-19)

PGMAKE101 - Introduction to PageMaker on the Macintosh
Date: January 25-29, 1988
NEW
Time: 10:00 - 12:00 noon

SASPC101 - Introduction to SAS on the IBM PC
Date: January 18-22, 1988
Time: 3:00 - 5:00 p.m.

Date: March 7-11, 1987
Time: 1:00 - 3:00 p.m.

SASPC201 - Intermediate Applications of SAS on the IBM PC
Date: February 15-19, 1988
Time: 3:00 - 5:00 p.m.

WRDPERF101 - Introduction to WordPerfect
Date: January 11-15, 1988
Time: 9:00 - 12:00 noon

Date: February 15-19, 1988
Time: 12:00 - 3:00 p.m.

Date: February 16, 18, 23, 25, March 1, 1988 **EVENING**
Time: 6:00 - 9:00 p.m.

Date: March 21-25, 1988
Time: 9:00 - 12:00 noon

Notes on Using Release 10.0 of IMSL

Andrzej J. Pindor
APINDOR at UTORONTO

The newest edition of the IMSL library, Edition 10.0, became available for user testing under VM/CMS and MVS on November 1, 1987. An article in the October/November issue of *ComputerNews* gave an overview of the enhancements in this new release and the method of accessing it on each system. This article suggests ways of using the Library Interface based on early experiences with Edition 10.0.

In order to get some feeling for the new release of the IMSL Library, to make a limited comparison with the Release 9.2, and also to see how the Library Interface works, I have tried two different FORTRAN programs from the field of computational physics. The first of these solves a Fredholm integral equation of the first kind (a well known ill-conditioned problem), using the regularization method. The second sets the parameters of a functional of a function of three spatial variables using gradient expansion and Pade approximants. The programs require IMSL routines from three

continued...

Release 10.0 of IMSL continued.

areas: numerical integration, linear algebra, and finding a minimum of a multivariate function. A summary of the results follows.

1. On the MVS system, if you just want to compile and run your program, use the catalogued procedure FORTGO. If you intend to create a load module (perhaps to save it for future use), and you are using the catalogued procedure FORTLEGO, make sure that the FORTRAN library (VFORTLIB) is searched first for external references, and the IMSL library is searched after it:

   ```
   // EXEC FORTLEGO,IX2=APPL,
   //  LIB2=`MATH.IMSL.LIB’
   ```

   or, if you are using the Library Interface (double precision):

   ```
   // EXEC FORTLEGO,IX=APPL,
   //  LIBRARY=`MATH.IMSL.DPIF’,
   //  IX2=APPL,LIB2=`MATH.IMSL.LIB’
   ```

   Otherwise, IMSL versions of intrinsic functions will be used instead of IBM versions. They are much slower (ten times or more), and you will end up with an inefficient load module.

   This is not a problem on CMS. The IBM versions of intrinsic functions are always linked. That is, whether you are using LINK mode or LOAD mode on CMS, it does not matter in which order you specify the libraries.

2. Use the Library Interface only as a guide to converting your program from Release 9.2 to 10.0. If you get a message that a given routine (from 9.2) has no replacement in 10.0, do not panic. If there was a routine in 9.2 to do what you want, there will be one in 10.0; just search through the manuals. One example is routine LEQIF, which solves a system of linear equations. The Library Interface produces the message “There are no replacement subroutines for LEQIF” because LEQIF uses virtual memory to store arrays and gives you control over how the main array is paged. This is left over from times when CPU memory was a precious commodity. In fact, Edition 10.0 has several subroutines to solve a system of linear equations.

   On the other hand, if the Library Interface does make a replacement for you, do not trust it blindly. The criteria used to decide when to make a replacement or when to tell you that there is no replacement are not obvious. For example, the routine ZXMWD from Release 9.2 finds a minimum of a function of several variables, performing a search from several starting points, which are chosen internally. You only specify how many starting points you desire. The routine used for replacement, DBCONF, searches for a minimum from one specified starting point, and this point is chosen by the Library Interface routine to be a centre of the constrained region. A parameter determining the number of starting points you input into ZXMWD is totally ignored, and you do not get a word of warning. It was necessary to run DBCONF with several starting points supplied by hand in order for the test program to work.

   Conclusion: Always check the source code for the Library Interface routine you are using. This allows you to see how the arguments are converted, and whether any arguments are ignored.

   On CMS, you can get the source code for a Library Interface routine using the command (after accessing the IMSL minidisk):

   getimsl <program> <precision>

   where <program> is the name of the routine you want and <precision> should be DOUBLE or SINGLE, depending on your needs. The source code will go onto your A minidisk as a file with the filetype FORTRAN and a filename identical to the name of the routine.

   On MVS, the double-precision routines are members of APPL.MATH.IMSL.IFDP.SRC (or IFSP for single precision). The Library Interface routine has the same name as the name of the 9.2 routine being converted.

3. Remember that the single- and double-precision routines for Release 10.0 are now in the same library and that the names of the double-precision

continued...

Release 10.0 of IMSL continued.

routines always start with letter D. The rest of the name is the same as the name of the corresponding single-precision routine.

4. Although the 10.0 routines may be expected to perform better on the whole, in some cases you may find a decrease in speed, since IMSL has dropped a number of simpler routines. For example, Romberg method routines (DCADRE) have been dropped, and all quadrature routines in 10.0 use the Gauss-Kronrod rule with at least 15 points. Consequently, if you have a smooth function and do not demand high accuracy, you may find the new routines an overkill.

In conclusion, the new routines are easier to use and give you more control over the way they arrive at results. The manuals are a pleasure to read (much better than the old ones) and are conveniently designed. However, the Library Interface leaves much to be desired, and the conversion from 9.2 to 10.0 may be, in some cases, more of a hassle than you expect. Plan ample time to do your conversion.

BMDP '87 Available for Testing on CMS

Andrzej J. Pindor
APINDOR at UTORONTO

BMDP '87 becomes available on CMS for user testing on December 1 and can be accessed through GETME BMDP NEW. Highlights of the 1987 Release of BMDP were described in some detail in the September 1987 issue of *ComputerNews.* An interesting feature of the new release is the DM (Data Manager), an interactive environment for data entry and manipulation. A manual for the Data Manager can be examined in the Information Centre library or ordered from BMDP.

It is no longer necessary to access a separate BMDPOPEN minidisk to run BMDP '87 programs with FORTRAN subroutines; GETME BMDP NEW is sufficient.

BMDP programs may be run from within SAS using PROC BMDP. A detailed description is available with HELP BMDPSAS, once the command GETME BMDP NEW has been issued. Programs used with BMDP '85 require a small change to the PROC BMDP statement to work with BMDP '87.

If you have questions concerning the new release, please contact Advising Services at 978-HELP.

Personnel Changes

John Roth has been promoted to System Software Programmer III.

Dean Bernard has been promoted to Computer Operator II.

Lee Oattes has joined Communications and Technical Support as System Software Programmer II.

Johnny Chee Wah, from Computer Systems Research Group, has joined the Systems Group.

Adriana Koufis has returned from her maternity leave.

Documents at UTCS

All vendor-produced documentation may be ordered through the UTCS Information Office, Room 206, Engineering Annex. UTCS documents and selected vendor documents are also stocked there for purchase. For more information on prices, call Dale Wright at 978-4990. Whenever feasible, documents are made available online, and users are encouraged to print their own copies. On the MVS and VM machines, special commands have been provided for this purpose.

To print online documents on:

IBM MVS
WYLBUR users type “do document?”
TSO users type “help document”
APL users type ")LOAD 1 UTCSGUIDE<RETURN>HELP"

IBM VM/CMS
Type “help document”

GP UNIX
Use *ipr* command

In these examples, the document to be printed is the UTCS Guide to Census Tapes (MANUAL/LISTING=CENSUS).
<RETURN> means RETURN or ENTER key.

TSO:

```
document census forms(yxle) <RETURN>
```

WYLBUR:

```
do document <RETURN> and respond to the prompts.
```

CMS:

```
document <RETURN> <RETURN>
laser census listing (forms yxle <RETURN>
```

GP UNIX:

```
nohup ipr -8p -fyxle /usr/doc/utcs/census & <RETURN>
```

UTCS Documents in hardcopy:

New:

Previously announced:
Academic's Guide to Microcomputer Systems
Character Sets for Highspeed Printing
UTCS GUIDE TO PRODUCTS AND SERVICES: Introduction
UTCS GUIDE TO PRODUCTS AND SERVICES: Basics
UTCS GUIDE TO PRODUCTS AND SERVICES: Accounting
UTCS Catalogue: Numerical Products
UTCS Catalogue: Statistics Products
UTCS Catalogue: Text Products
UTCS Guide to Census Tapes
UTCS Guide to Kermit
UTCS Guide to Micro File Transfer Service
UTCS Guide to Text Processing on GP UNIX

UTCS Documents online	MVS MANUAL	CMS LISTING	GP UNIX	Forms Code
New:				
Previously announced:				
UTCS GUIDE TO PRODUCTS AND SERVICES: Introduction	INTRO	INTRO	/usr/doc/utcs/intro	*
UTCS GUIDE TO PRODUCTS AND SERVICES: Basics	BASICS	BASICS	/usr/doc/utcs/basics	*
UTCS Catalogue: Access, Part 1	ACCESS1	ACCESS1	/usr/doc/utcs/access1	*
UTCS Catalogue: Access, Part 2	ACCESS2		/usr/doc/utcs/access2	*
UTCS Catalogue: IBM MVS Utilities	MVSUTIL	MVSUTIL		*
Product-Function List	UTILLIST	UTILLIST		BXQD
UTCS Catalogue: Numerical Products	NUMCAT	NUMCAT		*
Product-Function List	NUMLIST	NUMLIST		BXQD
UTCS Catalogue: Statistics Products	STATCAT	STATCAT		*
Product-Function List	STATLIST	STATLIST		BXQD
UTCS Catalogue: Text Products	TEXTCAT	TEXTCAT	/usr/doc/utcs/textcat	*
UTCS Guide to BMDP	BMDP	BMDP		*
UTCS Guide to Census Tapes	CENSUS	CENSUS	/usr/doc/utcs/census	*
UTCS Guide to GP UNIX			/usr/doc/utcs/gpunix	*
UTCS Guide to GPJS	GPJSX	GPJSX	/usr/doc/utcs/gpjs	*
UTCS Guide to Highspeed Printing	PRINT	PRINT	/usr/doc/utcs/print	*

* *Recommended forms code for the 8700 is YXLE unless otherwise stated.*
† *Use the 87set command. Type “help 87set”.*

Documents continued

UTCS Documents online	MVS MANUAL	CMS LISTING	GP UNIX	Forms Code
New:				
Previously announced:				
UTCS Guide to IBM MVS Online Storage	IBMDISK	IBMDISK		*
UTCS Guide to Kermit	KERMIT	KERMIT	/usr/doc/utcs/kermit	*
UTCS Guide to Micro File Transfer Service	MICROXFR	MICROXFR		*
UTCS Guide to Micro Laser Printing	MICRLASR	MICRLASR		*
UTCS Guide to SAS	SAS	SAS		*
UTCS Guide to SCRIBE (For printing instructions, see page 1 of document)		SCRIBE		*
UTCS Guide to Series/1 Terminal Use	SERIES	SERIES		*
3270 Emulation:				
Cybernex APL100 and Volker Craig VC404	CYBER	CYBER		*
DM1520	DM1520	DM1520		*
Hardcopy Terminal	HARDCOPY	HARDCOPY		*
IBM 3101	IBM3101	IBM3101		*
IBM PC Kermit	PCKERMIT	PCKERMIT		*
SOROC IQ	SOROC	SOROC		*
VT52	VT52	VT52		*
VT100	VT100	VT100		*
UTCS Guide to SPSS	SPSS	SPSS		*
UTCS Guide to SUBUTILS	SUBUTILS	SUBUTILS		*
UTCS Guide to Text Processing on GP UNIX			/usr/doc/utcs/text	*
UTCS Guide to TFW.MAK in SCRIBE		TFWMAK		*
UTCS Guide to TSO	TSOGD			*
UTCS Guide to UTDSUTIL	UTDSUTIL	UTDSUTIL		*
UTCS Guide to VM/CMS	CMSGD	CMSGD		*
UTCS Guide to WYLBUR	WYLINTRO			*
UTCS Rate Schedule (Commercial)		RATESCOM		†
UTCS Rate Schedule (External)		RATESEXT		†
UTCS Rate Schedule (Internal)		RATESINT		†
UTCS WYLBUR Tutorial	WYLTUTOR			*
Other Documentation online				
Kermit				
Kermit Protocol Manual	KERMITPM	KERMITPM		YXOE
Kermit User Guide	KERMITUG	KERMITUG		YXOF
ProComm				
ProComm Reference Manual	PROCOMM	PROCOMM		YXOE
VM Tape Documents				
TapeMap User's Guide and Reference		TAPEMAP		*
VMTAPE Messages and Codes		VMTMSGS		YXOE
VMTAPE User's Guide		VMTUSER		YXOE
VMSECURE				
VMSECURE User's Guide		VMSECURE		YXOE
Waterloo SCRIPT				
Reference Manual	WSCRPTRF	WSCRPTRF		YXLC
User's Guide	WSCRPTUG	WSCRPTUG		YXLC
Using SCRIPT in MVS/TSO	WSCRPTSO	WSCRPTSO		YXLC
Waterloo SCRIPT and a PostScript Printer	WSCRPTPST	WSCRPTPS		YXLC
Formula Processor Summary	WSCRPTFP	WSCRPTFP		YXLC
GML User's Guide	GMLUG	GMLUG		YXLC
GML Reference Summary	GMLRFSUM	GMLRFSUM		YXLC
OBS WYLBUR				
Messages and Codes	WYLMSGS			YXLD
Qwik Files	WYLQWIK			YXLD
Reference Summary	WYLREFCD			YXLG
Reference Manual	WYLREFMN			YXLD
7.0 Release Guide	WYLREL70			YXLC
User Guide	WYLUSER			YXLD
Electronic Mail				
A User's Guide to Electronic MAIL		MAILBOOK		YXOC

* *Recommended forms code for the 8700 is YXLE unless otherwise stated.*
† *Use the 87set command. Type "help 87set".*

Consulting and Enquiries

Applications Support & Advising Supervisor	Alex Nishri	BC214	978-7109
External Marketing Consultant	Ihor Prociuk	BC217	978-6875
Erindale College	Joe Lim	ER2035	828-5311
Information Office	Dale Wright	BC201	978-4990
Account & Access Code Enquiries (U of T)	Christine Gray	MP337	978-8703
Account & Access Code Enquiries (External)	Sylvia May	MP337	978-7148
IBM PC Maintenance	Kam Mark	BC103	978-5050
Tape Library (Academic Services)	Rosa Esteireiro	MP368	978-7319
Tape Library (Administrative Services)	Miranda Fong	MP368	978-6693
Terminal Rentals	Rosi Tseu	BC105	978-3787
UTCS Noncredit Short Courses	Irene Rosiecki	BC217	978-4565

Consulting & Advising Services:	978-HELP
CMS, TSO and GP UNIX userids:	ADVISOR
CMS Userid for mail problems:	POSTMSTR
System Status Enquiries (GP UNIX)	978-4318
System Status Enquiries (IBM)	978-7393
Interactive Services 300 (bps)	978-6200
Interactive Services 1200 (bps)	978-3959
Interactive Services 2400 (bps)	978-7239
Datapac	4320 0056
Telnet	0302043200056
Tymnet	<backspace>DPAC;302043200056

UTCS Directory

Director:	Dr. Warren Jackson	MP350	978-8948	WCJ at UTORONTO *
Associate Director:	Eugene Siciunas	MP350	978-5058	EUGENE at UTORONTO *
Managers:				
Communications &Technical Support	Norman Housley	BC121B	978-4967	NORMAN at UTORONTO *
Information Centre	Don Gibson	BC217	978-7331	DON at UTORONTO *
Internal Systems Support	Ron Vander Kraats	MP350	978-4428	RVK at UTORONTO *
Operations Support	Dr. Bob Chambers	MP350	978-7092	
Systems Support	Bill Lauriston	MP331	978-3579	BILL at UTORONTO *

Committees on Computing

Committee on Administrative Computing	Chair	Janice Oliver	978-4322	
UTCS Board	Chair	Prof. D.M. Nowlan	978-4984	NOWLAN at UTORONTO *
Supercompter Users' Group at U of T	Chair	Prof. P.P. Kronberg	978-4971	

Legend

BC = Bancroft Building
ER = Erindale
MP = McLennan Physical Labs

* NetNorth/BITNET/EARN

UTCS Terminal and Advising Sites

Names and Locations

Central Advising Office (CAO), 978-HELP
Engineering Annex (EA, CDF), 11 King's College Road, Rooms 103, 107, 107B, 201, 203
Erindale College (Erin), 828-5339, Mississauga Road, Erindale Campus, Rooms 2005, 2039, 2045
Robarts, Robarts Library, 130 St. George St., Room 1061A
Sidney Smith (Sidney), 100 St. George St., Rooms 1071, 2105
St.Michael's College, 121 St. Joseph St., Room 107
Trinity College, 6 Hoskins Ave., Room 024
Victoria University, 73 Queens Park Cres.

Sites	**Hours of Access**				**Restrictions***	**Advising**
	Mon-Thurs	**Fri**	**Sat**	**Sun**		
CAO	10:00-18:00	10:00-18:00	closed	closed	Research	978-HELP
CDF	24 hrs	24 hrs	24 hrs	24 hrs	Undergrads	No
EA	24 hrs	24 hrs	24 hrs	24 hrs	None	978-HELP for Research
Erin (2039) ☐	9:00-17:00	9:00-17:00	12:00-16:00	12:00-16:00	Research	Rm 2005
(2045)	24 hrs	24 hrs	24 hrs	24 hrs	Undergrads	Rm 2005
(235)†	8:00-22:00	8:00-17:00	closed	closed	None	Rm 2046
Robarts	8:30-24:00	8:30-24:00	9:00-22:00	13:00-22:00	None	978-HELP for Research
Sidney	7:00-24:00	7:00-24:00	7:00-24:00	7:00-24:00	None	978-HELP for Research
St.Michael's	24 hrs	24 hrs	24 hrs	24 hrs	None	Arranged by College
Trinity	8:00-22:00	8:00-22:00	8:00-22:00	8:00-22:00	None	Arranged by College
Victoria	8:30-23:00	8:30-23:00	closed	closed	None	Arranged by College

Legend

* Research includes graduates, faculty, staff.
☐ Key access available.
† Access restricted to building hours.

Advising Hours

CAO	Monday through Friday, 10:00 - 18:00
Erin	Monday through Friday, 09:00 - 20:00

Sites	**PACX**	**Network Terminal Server**	**CMS**	**Printers Terminals**	**CDF/PC**
CDF	N	N	N	Y	N
EA	N	Y	N	Y	N
Erin	Y	Y	N	Y	N
Robarts	Y	N	N	Y	Y
Sidney	N	Y	N	Y	Y
St.Michael's	Y	N	N	Y	Y
Trinity	N	N	Y	Y	Y
Victoria	Y	N	N	Y	N

(Y=yes, N=no)

UTCS Services

UTCS Centrally Owned and Managed

Systems

IBM VM/CMS

- General Purpose Timesharing; access to NetNorth, BITNET, and EARN networks; access to CRAY X-MP
- 4381-R03 processor, 32 megabytes of memory
- CP operating system, VM/SP HPO R4.2
- CMS timesharing system, VM/SP Release 4
- RSCS spooling system, Release 3
- CRAY station Release 4

IBM MVS

- TSO, WYLBUR, APL, Batch
- runs as a preferred guest under VM
- MVS operating system
- Xerox 8700 Laser Printing

GP UNIX
Technical Assistance: 978-8853

- General Purpose Timesharing under SUN UNIX 3.2
- SUN 3/280, 8 megabytes of memory
- access to Linotronic typesetter
- offers a sophisticated and powerful environment for text processing
- offers a sophisticated programming environment suitable for commercial software development or testing
- full access to USENET, an electronic technical information exchange facility
- offers excellent electronic mail facilities and ability to send or receive mail from most computer networks worldwide, such as UUCPNET, ARPANET, NetNorth, BITNET, CSNET, CDNNET

Services

Communications & Technical Support
Primary Phones: 978-3787, 978-4967

- Communications Group provides communications systems, terminals, modems, data channels: consulting and installation.
- Field Service Group installs and maintains communications and computer systems, particularly IBM PCs and Micro Vaxes, on a contract basis or on a cost-per-call basis.
- provides consulting on computer systems technology and installs computer systems
- provides access between the IBM systems and machines using UNIX, VMS and other operating systems. Ethernet, Pronet, and IBM TRN technologies are used over various transmission media including optical fibre. More basic communications techniques are also used for moderate speed links.
- provides consulting on local area networking and installs LANS
- provides access to NetNorth (BITNET), the North American Universities Network; and USENET, the UNIX networking fraternity
- will provide a communications solution to department needs on a contractual basis

Information Centre
Primary Phone: 978-HELP

- Provides assistance in use of electronic messaging, including use of Local Area Networks (LANS); NetNorth/BITNET/EARN, the world Universities network; CDNNET, the Canadian X.400 network; ARPANET; CSNET; USENET; and other international connections.
- provides advising, consulting and documentation on:
  - command languages, including CMS, TSO, WYLBUR, JCL, and UNIX
  - high level languages, including FORTRAN, and PL/I
  - packages and libraries, including SAS, SPSS-X, BMDP, IMSL, and NAg
  - editors and formatters, including XEDIT, TSO, WYLBUR, ed, SCRIBE, nroff/troff
- provides general micro support
  - selection consulting for hardware and software
  - Micro Lab for evaluation of hardware and software
  - advice on University discounts
  - media conversion and data transfer
  - operates UTCS Microcomputer Bulletin Board System
  - offers Micro Laser Printing Service
  - offers 35mm slide production service using Polaroid Palette
  - administers Local Area Network of PCs for Education Facility
  - administers Macintosh Education Facility
- high quality typesetting
- installs and maintains application packages
- provides short courses and seminars on the more popular services and software packages

The principal mandate of UTCS is to plan, implement, and operate facilites and "common-carrier" networks, and to plan and support divisional, departmental or project computer facilities as requested.

Facilities Managed by UTCS

Administrative Computing

- administrative IMS/VS, DB/DC, DB2, Batch, and TS0
- 4381-R03 processor, 32 megabytes of memory
- MVS operating system

Computer Disciplines Facility/VAX

VAX-11/780, 4 megabytes of memory
VAX-11/750, 4 megabytes of memory

- Computer Science interactive access
- UNIX (Berkeley UNIX 4.3BSD)

Computer Disciplines Facility/PC

- 97 TI Professional Computers connected in a Local Area Network
- introductory Computer Science instruction
- MS-DOS with Turing environment

Erindale College Systems

VAX 8200, 8 megabytes of memory
- instructional access using VMS
- research access

VAX-11/750, 5 megabytes of memory
- instructional access using UNIX (Berkeley UNIX 4.3BSD)

Institutional Relations System

VAX-11/750, 8 megabytes of memory
- database services to the owner departments using VMS

EPAS Facility

- 4361-5 processor, 16 megabytes of memory
- general VM/CMS services to the owner departments

Ontario Centre for Large Scale Computation (OCLSC)

- Cray Research Inc. X-MP/22
- 2 processors, 2 megawords main memory
- solid state disk (SSD) with 16 megawords of storage
- COS 1.15 operating system
- VAX-11/750 + microVAX II providing VMS front-end services
- VM front-end services provided by UTCS 4381-R03

UTCS Software List

SOFTWARE LIST for MAINFRAME COMPUTERS MVS, VM/CMS, UNIX

Each programming language or package available at UTCS has a support level. In general, Class A Products receive full support, Class B limited support (as time and resources allow), Class C no active support. For complete details of UTCS product support policy, see the UTCS GUIDE TO PRODUCTS AND SERVICES: Introduction.

Package/Compiler	System	Support	Version
Communications			
Kermit	VM/CMS	A	---
	UNIX	B	4C(058)
FTS	VM/CMS	A	---
MAIL/MAILBOOK	VM/CMS	A	86.359
MICROLASER	VM/CMS	A	---
macget/macput	UNIX	C	---
netcopy, netexec, to (NetNorth Tools)	UNIX	B	---
xmodem	UNIX	C	---
ftp,rsh,rlogin,telnet,rep *(Access via TCP/IP to most of the networked machines on all three campuses)*	UNIX	B	---
rn/Pnews	UNIX	B	---
mail,mh,Mail	UNIX	-	---
rje	UNIX	B	---
Graphics			
PLOTBASIC (FORTRAN)	MVS	A	---
	VM/CMS	C	---
PLOTBASIC EXTENDED ROUTINES	MVS	A	---
SAS/GRAPH	MVS	A	5.16
	VM/CMS	A	5.16
SURFACE II	MVS	C	---
Languages			
APL (Sharp)	MVS	C	May 83
ALGOLW (Stanford)	MVS	C	n/a
ASSEMBLER(F)	MVS	C	2.1
	VM/CMS	C	---
A.A.E.C. PASCAL	MVS	C	2.0
Concurrent Euclid	VM/CMS	C	1.9
FORTRAN H EXT.	MVS	B	2.2.1
FORTUTILS	VM/CMS	A	2.2
LISP	MVS	C	---
MARKEXAM	MVS	C	---
PL/C	MVS	C	---
PL/I CHECKOUT COMPILER	MVS	B	1.3.0
	VM/CMS	B	1.3.0
PL/I OPT COMPILER	MVS	B	1.5.1
	VM/CMS	B	1.5.1
REXX	VM/CMS	A	---
SNOBOL 4	MVS	C	3.5
	VM/CMS	C	3.5
SPITBOL	MVS	C	---
Turing	VM/CMS	C	---
UTCS FORTRAN UTILITIES	MVS	B	---
VS COBOL	MVS	C	2.4
VS FORTRAN	MVS	A	1.4.1
	VM/CMS	A	1.4.1
VS Pascal	VM/CMS	C	2.2
WATBOL	MVS	C	V3L2
Waterloo C	VM/CMS	C	1.3
WATFIV	MVS	B	---
	VM/CMS	C	V2L0
WATFOR-77	VM/CMS	A	1.3
cc	UNIX	A	---
f77	UNIX	C	---
ratfor	UNIX	C	BSD std.
ttc	UNIX	C	---
pc	UNIX	C	BSD std.
yacc	UNIX	C	---
awk	UNIX	C	---
adb,dbx	UNIX	C	BSD std.
Numerical			
DYNAMO	MVS	B	4.07
EISPACK	MVS	C	4
FORMAC	MVS	C	---
FUNPACK	MVS	C	---
GPSS	MVS	A	Rel.1, Mod. Level 4
IMSL	MVS	A	9.2
	VM/CMS	A	9.2

Software List continued

Package/Compiler	System	Support	Version
LINPACK	MVS	C	---
	VM/CMS	C	---
MINOS	MVS	C	4.0
MINPACK	MVS	C	1
MPSX	MVS	C	Rel.1, Mod. Level 6
NAg	MVS	A	Mark 11
Statistical			
BMD	MVS	C	---
BMDP	MVS	A	Level 85, Level 87
	VM/CMS	A	Level 83, Level 85
GENSTAT	MVS	C	4.04B
Minitab	VM/CMS	B	5.1
NAg	MVS	A	Mark 11
NTSYS	MVS	C	Dec. 1982
SAS	MVS	A	5.16
	VM/CMS	A	5.16
SPSS	MVS	C	9.1
SPSS^x	MVS	A	2.2
	VM/CMS	A	2.2
TSP	MVS	C	3.5
Text Processing			
COGS (Concordance Generating System)	MVS	B	3.1
KWIC	MVS	C	---
OCP (Oxford Concordance Program)	MVS	C	1.4
SCRIBE	VM/CMS	A	4(1400)-1
Waterloo SCRIPT	MVS	B	85.1
	VM/CMS	B	86.1
XEDIT	VM/CMS	A	---
8700 Pseudotypesetting	VM/CMS	A	n/a
MICROLASER	VM/CMS	A	---
ed	UNIX	A	---
vi	UNIX	C	---
cmacs	UNIX	C	---
spell	UNIX	C	---
diction/explain	UNIX	C	---
eqn	UNIX	A	---
tbl	UNIX	A	---
pic	UNIX	C	---
troff	UNIX	A	---
nroff	UNIX	A	---
TeX	UNIX	C	---
Utilities			
DFSORT	MVS	A	6.0
DSMAP	MVS	A	---
FILEBOL	MVS	C	---
FORTUTILS	VM/CMS	A	2.2
GRIPE	MVS	A	---
IBM UTILITIES	MVS		---
IEBGENER	MVS	A	---
IEBCOPY	MVS	A	---
IEHMOVE	MVS	A	---
TAPEPRT	MVS	A	---
TAPEEXRAY	MVS	A	---
TCOPY	MVS	A	---
TPRINT	VM/CMS	C	---
UTCS FORTRAN UTILITIES	MVS	B	---
crypt	UNIX	A	BSD std.
compress	UNIX	C	BSD std.
csh	UNIX	B	BSD std.
diff	UNIX	A	BSD std.
grep	UNIX	A	BSD std.
ipr	UNIX	B	---
learn	UNIX	C	BSD std.
patch	UNIX	C	---
sed	UNIX	A	BSD std.
sort	UNIX	A	BSD std.
sh	UNIX	A	BSD std.
tar	UNIX	A	BSD std.
uniq	UNIX	A	BSD std.

Software List continued

SOFTWARE LIST for MICROCOMPUTERS

The following are microcomputer software packages for which UTCS can provide either support or some information. As with mainframe products, micro packages receive full support (Class A), limited support (Class B), or no active support (Class C). The specific criteria differ from those for mainframe classes and are outlined in the *Academic's Guide to Microcomputer Systems.*

Package/Compiler	Support	Version
Communications		
Kermit (MS-DOS)	A	2.27d
Kermit (APPLE II)	A	---
Kermit (CP/M)	C	---
Kermit (Macintosh)	B	---
PC TALK3	C	---
PC PLOT III	A	---
ProComm	A	2.42 UT
MacTerminal	B	---
WYLBUR/PC	C	---
Database Managers		
4th Dimension	B	Int. 1.03
AskSam	C	2.2
Clipper	B	---
DATAEASE	B	---
dBASE II (CP/M)	B	---
dBASE II (MS-DOS)	C	--
dBASE III (MS-DOS)	A	1.1
dBASE III Plus	A	1.1
dBIIICompiler	C	1.1
FoxBASE	C	2.14u
Notebook II	B	2.03
REFLEX	B	---
ViewFinder III	B	---
ZyINDEX	B	---
Desktop Publishing		
PageMaker (Macintosh)	B	2.0a
PageMaker (IBM PC)	B	1.0a
Ventura (IBM PC)	B	1.1
XPress (Macintosh)	C	1.0
Graphics		
DR HALO	C	---
Illustrator	B	1.0
Lotus 1-2-3	B	---
Microsoft CHART (Macintosh)	C	---
MacPaint	B	---
WATCOM GKS	B	---
35mm Express	B	---
Freelance Plus	B	2.0
Languages		
BASIC	A	---
Microsoft FORTRAN	C	---
TURBO Pascal	B	---
WATFOR-77	A	---
Operating Systems, Utilities		
APPLE Turnover (Macintosh)	A	---
CP/M	B	---
FASTBACK	B	---
Finder (Macintosh)	A	5.5
Hypercard (Macintosh)	A	1.01
PC-DOS	A	---
Sidekick	B	3.2
SuperKey	C	---
System (Macintosh)	A	4.1
TURBO Lightning	C	---
XenoDisk	A	1.41
Spreadsheet		
APPLEWORKS	C	---
HAL	B	---
Lotus 1-2-3	B	2.01
Multiplan (Macintosh)	C	---

Software List continued

Package/Compiler	Support	Version
Statistical		
Minitab	C	---
PowerStat	C	1.04
SAS/PC	A	6.02
SPSS/PC +	A	---
STATPRO	C	2.0c
Word Processing		
Gutenberg Senior	C	---
FinalWord II	B	2.0
MacWrite	C	---
Manuscript	C	---
Microsoft Word (Macintosh)	A	3.01
Microsoft Word (MS-DOS)	B	2.0
Nota Bene	B	2.0
T^3	C	---
Volkswriter Scientific	C	---
WordPerfect	A	4.1; 4.2
WordStar	B	---

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